

REMARKS

Claims 1-3, 5, 6, 9-17, 36, and 38-46 are pending.

Claims 11 and 16 are rejected under 35 U.S.C. 112, first paragraph as containing subject matter that is not enabled. Specifically, the Examiner states “claim 11 describes a bonding layer as being a multilayer structure but there is no disclosure in the specification describing what the materials of the structure are, the thickness of the layers, or the number of layers and is thus not enabled. Claim 16 refers to the fixation layer as being multilayered and is similarly not enabled.”

The test for enablement, set forth in MPEP 2164.01, is whether the “disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention.” Applicant describes at least four examples of multilayered metallization structures in the electrodes. See for example, page 2 lines 13-15: “A p-electrode having a transmittance of 40 to 50% has been constructed utilizing a multi-layered film of nickel and gold having an 8 nm gold film layer on a 1 nm of nickel layer;” page 2, lines 19-20: “A multi-layered film of nickel and gold having a thickness of several hundreds of nanometers is often used as the bonding pad;” and page 5 lines 16-20: “Next, about 300 nm of nickel and 50 nm of gold are successively vapor-deposited and patterned to form electrode metal layer 21A for bonding to the p electrode and a first annealing is performed (annealing 1). Next, 10 nm of Ti and 200 nm of Al are successively vapor-deposited and patterned on the n-type GaN part to form n-electrode 7.” Applicants respectfully submit that the above passages teach guidelines for forming multilayered structures as part of the electrode, and therefore enable claims 11 and 16.

Claims 42 and 44 are rejected under 35 U.S.C. 112 second paragraph as being indefinite. Claims 42 and 44 are amended to clarify or delete the phrases rejected by the

Examiner. Applicants respectfully submit that all claims meet the requirements of 35 U.S.C. 112.

Claims 1, 2, 7-11, 17, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al., U.S. Patent 5,959,307 (hereinafter “Nakamura”) in view of Kitagawa et al., U.S. Patent 5,616,937 (hereinafter “Kitagawa”). Applicants respectfully traverse the rejection. Claims 1 and 36 are amended to recite “the fixation layer is conductive.” Kitagawa teaches a “protective film 17” that is “an insulating film.” See, for example, Col. 4, lines 65-67. Since Kitagawa teaches only an insulating protective film over electrode 16, even in combination Nakamura and Kitagawa do not teach all the elements of claims 1 and 36, since neither reference teaches a “fixation layer [that] is conductive,” as recited in claims 1 and 36. Accordingly, claims 1 and 36 are allowable over the combination of Nakamura and Kitagawa. Claims 7, 8, and 37 are canceled, rendering their rejection moot. Claims 2, 9-11, and 17 depend from claim 1 and are therefore allowable over Nakamura and Kitagawa for at least the same reason as claim 1.

Claims 38-42 and 44-46 are rejected under 35 U.S.C. 102(a) as being anticipated by Orita et al., U.S. Patent 6,117,700 (hereinafter “Orita”). The present application is a continuation of U.S. Patent 6,194,743 and therefore has an effective filing date of December 15, 1998. Applicants note that Orita was filed in the United States on September 2, 1999, after the effective filing date of the present application, and is thus not available as a prior art reference under 35 U.S.C. 102(e). MPEP 706.02(a)III teaches that for 35 U.S.C. 102(a) to apply as to a printed publication or patent, “the reference must have a publication date earlier in time than the effective filing date of the application” Since Orita was not published until it issued on September 12, 2000, Orita is not available as a prior art reference under 35 U.S.C. 102(a). Applicants note that Orita claims priority to two Japanese patent applications, the earliest of which was filed in Japan on September 9, 1998. That application would not

have published in Japan until about 18 months after September 9, 1998, well after Applicants' effective filing date of December 15, 1998. Accordingly, claims 38-42 and 44-46 are allowable over Orita.

Applicants thank the Examiner for indicating that claims 5, 6, 9, 12-15, and 43 are allowable.

Submitted with this paper is an information disclosure statement citing U.S. Patent 5,563,422. Figs. 6, 7, and 8 each show a protective film (411, 412, and 413 respectively) covering p-electrode 15. Protective film 411 is described at column 10, line 8 as "insulating" and therefore does not anticipate claims 1 and 36. Applicants have found no teaching in U.S. Patent 5,563,422 of "a barrier overlying the metal electrode for preventing migration of metal from the metal electrode" as recited in claim 38.

In view of the above arguments, Applicants respectfully request allowance of all pending claims. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

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